Business Models and Governance Recommendation

Summary:

Recommendation: The OFR should conduct research into whether the corporate governance standards and risk management practices of financial institutions can serve as a leading indicator of potentially significant systemic risks.

Rationale: Weak corporate governance, flawed risk management practices, and unsustainable business models can be a contributor to, or an accelerator of, systemic crises. While there is a rich tradition of research focusing on quantitative aspects of risk management, the subcommittee feels that the OFR should also develop a complementary set of tools for understanding the "contextual" aspects of risk management – including business model design, governance, and culture – drawing on expertise in behavioral economics, corporate governance, and organizational behavior. Specifically, our recommendation is that OFR evaluate whether a research program aimed at assessing these contextual elements can be helpful in understanding their influence on systemic risk and in identifying potential systemic risk exposures.

Background:

Definition of the problem:

How to identify characteristics of the business models of financial services entities that would be leading indicators of potentially significant systemic risks.

Recommendation:

1. The OFR should understand and assess key corporate governance structures, best practices and policies in systemically significant financial institutions, particularly those directly related to the risk management function, and seek to better understand the roles these structures play in effective risk management both within specific firms and system-wide.
2. The OFR should seek to understand the business models and culture of systemically significant financial institutions, particularly as they change over time, and should seek to apply lessons of past business model driven financial crisis to help identify possible business model driven sources of systemic risk.
3. The OFR should develop the capacity to better understand the extent of linkages among systemically significant firms that result from those firms' business models. (As linkage maps are developed by the Liquidity and Funding Working Group and the Capital Stress Working Group, the OFR can improve its understanding of the systemic impact of

management decisions under stress scenarios.)

4. The OFR should recruit and develop staff with expertise in organizational behavior, corporate governance, and business model analysis, which are all fields that are distinct from financial economics. In relation to incentives issues, the OFR should develop expertise in behavioral economics.
5. The OFR's approach to these recommendations should begin with a literature review, and a review of existing firm specific data relevant to these three issues, and then move to developing a comprehensive standardized data set to form the basis of real time monitoring and analysis aimed at addressing the recommendations above.

Hypothesis:

Risk management is an essential component of running a financial services entity.[1] Nonetheless, while episodes involving systems failures like the Flash Crash have been costly to some market participants, genuine systemic crises with macro-economic consequences have largely been the consequence of the adoption of unsustainable business models by groups of financial institutions and financial market actors.

- History shows that having good quantitative tools to measure and analyze risk have failed to prevent a financial crisis because the assumptions going into the models are over-optimistic. Those assumptions are often by-products of a larger failure to look critically at business models. Governance and culture are important influences on the ability of financial firms to look critically at their business models, and can lead managers to decide to take certain risks that may ultimately prove to be systemically destabilizing.
- While these issues can be systemically significant in a single very large firm, they are most relevant to the work of the OFR when they are present in multiple firms at the same time—i.e. when a problematic business model becomes widespread throughout the financial system.
- There is a rich tradition of addressing the ***quantitative*** aspects of risk management (e.g. calculation of risk metrics, monitoring limits, stress tests).
- More recently, risk managers have worked to better understand the ***contextual*** aspects of risk management[2] – the ***business model, governance and culture*** within which a financial services entity operates (e.g. what are the risks that the entity should be taking, who is responsible for deciding which risks to take and for managing those risks, how do they

[1] Risk management is also important for non-financial entities. Essentially every management decision either increases or decreases any entity's net exposure to risk. We can limit our comments to financial services firms, but doing so misses important connections to non-financial firms. For example, Treasury functions of non-financial firms are directly connected to the financial system. Similarly employer-sponsored retirement plans rely on the financial system to provide investment and insurance products.

[2] We introduce the term "contextual" here since that it is a better word than "qualitative" or "behavioral" to capture what we are addressing.

actually manage those risks, how do risk managers relate to other executives and the Board). The OFR should consider developing its tools and resources to understand how these contextual aspects of financial services entities may expose the US economy to systemic risks.

- Precision in risk management can be misleading. The nature of contextual risk analysis is that it is not necessarily as precise in its outputs as certain types of quantitative risk analysis. However, the contextual understanding should be sufficiently rigorous, combining both qualitative and quantitative analyses, to understand trends and develop early warnings.

Examples of institutional characteristics:

Financial metrics, governance structures and other institutional characteristics can provide insight into whether an entity or group of entities may have adopted or be at risk of adopting unsustainable business models. A few characteristics have been identified in the FRAC discussions (not exhaustive or in any particular order):

1. Corporate governance structure:
   a. Degree of Board independence (e.g. combined CEO/Chairperson role, number of Non-Executive Board members)
   b. Degree of independence of risk function, including reporting structures to management and Board
   c. Number of legal entities and extent to which entities have clearly articulated business purpose
   d. Degree of centralization and independence of balance sheet liability management

2. Risk and revenue model:
   a. Degree of clarity as to sources of return and risks associated with those returns
   b. Extent of leverage (i.e., debt vs. equity)
   c. Degree to which profit centers in firm are dependent on highly-levered transactions
   d. Degree of reliance on rolling hedges forward
   e. Degree of mismatch in timing between sources of funds and uses of funds (e.g. funding long-term business with short-term sources)
   f. Degree to which CFO/Treasury function is operating as a profit center
   g. Rapid growth of financial services revenues, particularly in business segments characterized by liquid, competitive markets
   h. Disproportionately large exposure to a market segment, particularly in a hitherto broadly diversified financial institution.

3. Systemic linkages:

a. Degree of connectivity to other similar financial entities (e.g. insurers to reinsurers, banks to other banks)
b. Degree of connectivity to other non-similar financial entities (e.g. banks to clearing houses, hedge funds to banks, insurers to asset managers)
c. Degree of concentration of funding sources
d. Degree of exposure to breakages in short-term liquidity markets
e. Degree of exposure to "run-on-the-bank" situations (e.g. insurers writing products with short-term cash calls)

Developing insight:

Since the study of the contextual aspects of risk management is relatively new, the OFR should consider a few guiding principles in developing its insight.

1. Entities are entitled to manage themselves as they see fit (within regulatory and other constraints). As such, they are entitled to make both good and bad decisions. The OFR should only be interested to assess whether there are systemic implications from managerial decisions, for example:
   a. the failure of a single entity can have a significant ripple effect, or
   b. a trend of financial firms making the same type of decisions and incurring the same type of risks, that can lead to the potential failure of several entities

2. The OFR's objective should be to understand trends that may have systemic implications and to develop early-warnings
   a. Monitor relevant entity characteristics that are available in relatively current-time (vs. infrequently with a long lag)
   b. Maintain regular dialog with risk management professionals and regulators to identify changes in business models and practices
3. The OFR should recognize that its analysis will not be precise:
   a. Contextual risk management issues don't always lend themselves to large volumes of data or easily verifiable mathematical models
   b. Nevertheless, the OFR should strive to develop risk analyses that provide plausible insights, even if the degree of mathematical precision is not high
   c. Even if a strong conclusion is not available, the analysis can indicate areas that need to be more closely monitored or investigated more deeply

4. Wherever possible, risk indicators should be linked to the appropriate regulatory body with authority to take action in a market sector.
   a. As the OFR undertakes its research to identify the institutional characteristics, it should coordinate its efforts with the relevant regulatory bodies to confirm its choices
   b. If the OFR's analysis identifies an area of concern, the relevant regulatory body or

bodies should be fully engaged to take any appropriate action that is deemed necessary

5. The OFR should acquire the appropriate expertise to conduct such research and develop its insights.
   a. Given its initial focus on data and quantitative metrics, it is likely that the OFR will have to expand its resources to acquire the necessary skills to undertake this exercise, for example:
      a) Behavioral economists – to develop understanding of markets that do not behave "rationally"
      b) Operational researchers – to build systems dynamic and game theoretic models that test the effect of various business models, market linkages, incentive structures and governance structures, even with sparse data
      c) Experienced senior executives, including experienced senior risk managers –to help explain the "how and why" of the decisions that managers are likely to make under various business conditions (essentially helping the OFR gain insight into how decisions about business models are made)
      d) Organizational behavior and human resource experts – to help understand the dynamics of corporate culture
   b. The OFR should keep abreast of the growing body of practice in the area of governance and corporate culture:
      a) Although there are many views of corporate governance, a few "common" practices may be developing and can provide valuable insight to the OFR.
      b) At some point the OFR may want to recommend minimum standards in certain areas for systemically significant institutions, for example around transparency in delegations of authority or non-GAAP compensation incentives.

Approach:
The approach would involve the following steps:

1. Literature review: There is a significant body of academic and industry research that address this set of issues, and this literature has become significantly richer in the aftermath of the financial crisis that began in 2007. The OFR should conduct an in-depth review and develop hypotheses for the types of characteristics that can be observed and provide insight into impact on financial stability.

2. Short-list of key characteristics by market sector

3. Metrics for these characteristics, both qualitative and quantitative

4. Assessment of data availability for these characteristics
   a. Is real-time data available?

b. How useful is lagged data (e.g., annual statement info)?
c. Is the information currently provided to regulators?

5. Assessment of systemically significant financial institutions and financial markets as a whole against these characteristics

Funding Map Recommendation

Summary:

Recommendation: The OFR should consider building funding maps that depict the flow of funds among market participants, their inter-linkages, and potential pressure points for key sectors of financial markets.

Rationale:
The propagation of systemic risk is fueled by the funding connections of financial market participants. The Risk Management subcommittee recommends that the OFR develop a map that depicts the flow of funds among market participants, which can be used to identify key linkages and inter-dependencies and potential pressure points in future systemic crises. The subcommittee has developed a proof-of-concept for such a map for the flow of funds to and from US broker-dealers, to illustrate a critical nexus in wholesale funding markets. Our recommendation is that the OFR evaluate the usefulness of funding maps, assess whether they can be populated and updated with data either already collected by other Federal agencies or potentially available from market participants, and consider whether they should be extended to sectors beyond broker-dealers.

Background:

Overview:

- The Liquidity and Funding Working Group of the FSRM focused its work efforts around the development of a "Funding Map," which illustrates the funding risks across financial market participants
- A Funding Map is a graphical balance sheet view of the primary business activities and funding sources of a financial market participant
- The Funding Map highlights key funding risks associated with the funding sources used by financial market participants, providing key insight into potential weaknesses and risks that could affect overall market financial stability

Approach:

- The Working Group began by choosing "Bank / Dealers" as the sample financial market participant
- First, the Working Group identified the primary business activities and funding sources for Bank / Dealers
- Subsequently, the Working Group defined the key participants that interact with Bank /

Dealers, grouping these into three categories: Cash Providers, Securities Lenders, and Leverage Takers
- Given some activities require an intermediary between the Bank / Dealer and its counterparties, these were also identified and grouped into three categories: Triparty Agents, Repo Central Counterparties, and Clearing Exchanges
- Directional arrows were added to connect external participants and intermediaries to the Bank / Dealer, reflecting the exchange of cash and/or securities
- As a next step, the Working Group evaluated the durability of the Bank / Dealer's funding sources, categorizing these into less and more durable funding types
- The risks identified with less durable funding sources were highlighted and described on the Funding Map

As a final step, the group recognized several stress triggers that could amplify these funding risks and graphically represented the effect of each trigger on the participants and Broker / Dealer

Benefits:

The Funding Map identifies funding sources, potential stress points, and stress triggers / risk amplifiers

- Simple view of business activities performed by financial market participants
- Directional display of the exchange of cash or securities between participants
- Clear identification of less durable funding sources
- Defined stress triggers and amplifiers of funding risks between participants

Recommendations:

- The Working Group recommends that the OFR, working in coordination with the Federal Reserve and other regulatory agencies, prioritize collecting data to complete the funding map for the Bank / Dealer channel

    - The data could be compiled from individual firm participants. For example, Bank/Dealers could provide the amount of Prime Brokerage client cash (free credits) used to fund other clients' margin loans, while securities lenders could provide the volume of securities loaned, cash and non-cash collateral accepted, and indemnified repo provided back to broker-dealers

- The group also recommends that the OFR build upon this existing work by creating a Funding Map for other key financial market participants, which would provide a comprehensive view and understanding of the funding risks within the financial market as a whole and the potential for contagion given the interrelationship of participants

- The Funding Map can also be expanded to incorporate international linkages. For instance, the extent to which US money market participants provide sources of funds to foreign (non-US) global banks or broker dealers

- The group recommends that the following market participants take priority:
  - Money Market Funds
  - Mortgage Originators
  - Credit Insurance

- The Working Group believes that this Funding Map could be leveraged in a number of different ways and welcomes further discussion